CLAIMS

What is claimed is:

1. An antibody, or fragment thereof, which binds to an epitope under specifically chosen conditions, the bond of the antibody, or fragment thereof, to the epitope being broken under specifically chosen different conditions, wherein both the specifically chosen binding conditions and the conditions under which the bond is broken lie within physiologically acceptable limits.

2. The antibody, or fragment thereof, of claim 1 further comprising a diagnostically, therapeutically or cosmetically active substance conjugated thereto.

3. The antibody, or fragment thereof, of claim 1 or claim 2, characterized in that the specifically chosen binding conditions and the conditions under which the bond is broken are dependent upon pH.

4. The antibody, or fragment thereof, of claim 3, characterized in that the antibody, or fragment thereof, binds to the epitope at a pH within a range of 4 and 8.5, and the bond between the antibody, or fragment thereof, and the epitope is broken at a different pH within the range of 4 and 8.5.

5. The antibody, or fragment thereof, of claim 3, characterized in that the antibody, or fragment thereof, binds to the epitope at a pH within a range chosen from a range of between 4 and 7 and a range of between 7 and 8.5, and the bond between the antibody, or fragment thereof, and the epitope is broken at a pH of 7.

6. The antibody, or fragment thereof, of claim 3, characterized in that the antibody, or fragment thereof, binds to the epitope at a pH of 7, and the bond between the antibody, or fragment thereof, and the epitope is broken at a pH within a range chosen from a range of between 4 and 7 and a range of between 7 and 8.5.

7. The antibody, or fragment thereof, of claim 3, characterized in that the antibody, or fragment thereof, binds to the epitope at a pH within a range chosen from a range of between 4 and 6 and a range of between 8 and 8.5, and the bond between the antibody, or fragment thereof, and the epitope is broken at a pH of between 6 and 8.

8. The antibody, or fragment thereof, of claim 2, characterized in that the antibody, or fragment thereof, binds to the epitope at a pH of between 6 and 8, and the bond between the antibody, or fragment thereof, and the epitope is broken at a pH within a range chosen from a range of between 4 and 6 and a range of between 8 and 8.5.

9. The antibody, or fragment thereof, of claim 1 or claim 2, characterized in that the specifically chosen binding conditions and the conditions under which the bond is broken are dependent upon ion strength.

10. The antibody, or fragment thereof, of claim 9, characterized in that the antibody, or fragment thereof, binds to the epitope at an ion strength within a range of 0 and 13 M, and the bond between the antibody, or fragment thereof, and the epitope is broken at a different ion strength within the range of 0 and 13 M.

11. The antibody, or fragment thereof, of claim 9, characterized in that the antibody, or fragment thereof, binds to the epitope at an ion strength within a range of 0 and 500 mM, and the bond between the antibody, or fragment thereof, and the epitope is broken at an ion strength within the range of 1 and 13 M.

12. The antibody, or fragment thereof, of claim 9, characterized in that the antibody, or fragment thereof, binds the epitope at a pH within a range of 4 and 8.5 and/or at an ion concentration within a range of 0 and 13 M, and the bond between the antibody, or fragment thereof, and the epitope is broken at a different pH within the range of 4 and 8.5 and/or a different ion strength within the range of 0 and 13 M.

13. The antibody, or fragment thereof, of any of the foregoing claims, characterized in that the antibody, or fragment thereof, comprises a F(ab), F(ab)', F(ab)'$_2$ or an scFv.

14. The antibody, or fragment thereof, of any of the foregoing claims, wherein said antibody, or fragment thereof, is capable of use in a targeted or temporary diagnostic, therapeutic or cosmetic treatment of externally accessible parts of a human or an animal body.

15. The antibody, or fragment thereof, of claim 14, wherein said targeted or temporary diagnostic, therapeutic or cosmetic treatment comprises a treatment of an oral cavity of a human or an animal body.

16. The antibody, or fragment thereof, of claim 15, wherein said antibody, or fragment thereof, is capable of bleaching teeth and molars included in said oral cavity.

17. The antibody, or fragment thereof, of claim 15, wherein said antibody, or fragment thereof, is capable of detecting plaque in said oral cavity.

18. The antibody, or fragment thereof, of claim 15, wherein said antibody, or fragment thereof, capable of removing plaque in said oral cavity.

19. The antibody, or fragment thereof, of claim 14, wherein said targeted or temporary diagnostic, therapeutic or cosmetic treatment comprises a treatment for fighting infections in externally accessible parts of a human or an animal body.

20. The antibody, or fragment thereof, of any of foregoing claims 2 through 19, wherein the diagnostically, therapeutically or cosmetically active substance comprises an enzyme.

21. The antibody, or fragment thereof, of claim 20, wherein the enzyme is chosen from a group consisting of an oxidase, a peroxidase, a protease, a cell-wall lysing enzyme and a plaque matrix inhibitor.

22. The antibody, or fragment thereof, of claim 21, wherein the enzyme comprises an oxidase chosen from a group consisting of glucose oxidase, lactase oxidase and uric acid oxidase.

23. The antibody, or fragment thereof, of claim 21, wherein the enzyme comprises a peroxidase chosen from a group consisting of horseradish peroxidase, myeloperoxidase, lactoperoxidase and chloroperoxidase.

24. The antibody, or fragment thereof, of claim 21, wherein the enzyme comprises a protease chosen from a group consisting of papain, pepsin, trypsin, ficin and bromelin.

25. The antibody, or fragment thereof, of claim 21, wherein the enzyme comprises lysozyme.

26. The antibody, or fragment thereof, of claim 21, wherein the enzyme comprises a plaque matrix inhibitor chosen from a group consisting of dextranase and mutanase.

27. The antibody, or fragment thereof, of any of foregoing claims 2 through 26, wherein the diagnostically, therapeutically or cosmetically active substance comprises a fluorescent or radioactive substance.

28. The antibody, or fragment thereof, of any of foregoing claims 2 through 27, wherein the antibody or fragment thereof is capable of binding an epitope of a pathogenic micro-organism or other pathogenic compound.

29. The antibody, or fragment thereof, of claim 28, wherein said pathogenic micro-organism is chosen from a group consisting of Actinomyces actinomycetem comitans, Porphyromonas gingivalis, Prevotella intermedia, Streptococcus mutans, Bacteroides forsythus, Eikenella corrodens, Treponema denticola, Campylobacter lectus, and Fusobacterium nucleatum.

30. A composition comprising:
at least one antibody, or fragment thereof, as claimed in any of claims 1 through 29; and
at least one physiologically acceptable dilutent, solvent or carrier.

31. A composition useful as a teeth cleaning agent, mouthwash, mouth spray, chewing tablet, chewing gum, cream or ointment comprising:
at least one antibody, or fragment thereof, as claimed in any of claims 1 through 29; and
at least one physiologically acceptable dilutent.

32. A method for manufacturing a medication for targeted or temporary treatment of externally accessible parts of a human or an animal body, comprising:
providing an antibody, or fragment thereof, as claimed in any of foregoing claims1 through 29.